

REMARKS

The Examiner imposed a restriction requirement during an interview dated February 15, 2005: Group I - claims 1-7, 22, and 23, Group II - claims 8-13 and 17-20, Group III - claims 14-16, and Group IV - claim 21.

The Office action dated September 17, 2004 pertains to claims 1-23. However, since applicants elect to prosecute Group I (i.e., claims 1-7, 22 and 23) without traverse, this amendment responds to the rejection of claims 1-7, 22, and 23 rather than nonelected claims 8-21. Applicants amend claims 1-7 and 22-23, and request reexamination and reconsideration of application.

In paragraph nos. 2-3 of the Office action, the Examiner rejects claim 1 as unpatentable for obviousness over El-Batal et al., U.S. Application Publication No. US2003/0221061 (El-Batal) and Okada, US Patent No. 6,381,675 (Okada).

The Examiner states that El-Batal teaches a coupling circuit for an ATA storage device as in claim 1, but notes it does not disclose a microcontroller adapted to control the coupling for the ATA connection.

The Examiner states that Okada teaches coupling circuit switches (Figures 1-3) and a microcontroller adapted to control the coupling circuit switches for the ATA connection.

The Examiner concludes it would have been obvious to combine El-Batal and Okada since they teach coupling circuit switches associated with each ATA disk for selectively connecting an ATA communication path of each ATA disk with a multiple controller and Okada's teaching of a microcontroller adapted to control the coupling circuit switches for the ATA connection would increase user friendliness of the ATA communication path control.

However, there is insufficient motivation to combine El-Batal and Okada. El-Batal relates to Serial ATA while Okada relates to parallel ATA. The electronics of ATA and

1 SATA are very different. For example, SATA is based on low voltage differential
2 signaling while ATA is based on 3.3 volt single ended CMOS signaling. This alone
3 prevents the combination suggested.

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5 Even if El-Batal and Okada are combined as suggested, they do not teach plural
6 coupling circuits each containing a microcontroller for a Serial ATA storage device as
7 recited in amended claim 1. Each of Okada's switch devices 4a - 4f in Figures 1-3 do
8 not contain a microcontroller. Okada's CPU 10 is contained in the array controller 2a. If
9 the CPU 10 of Okada fails, the array controller fails. This contrasts with the invention
10 where failure of a microcontroller in a coupling circuit only generates failure of a single
11 SATA storage device. This protects the ability to perform high data throughput. This
12 claim limitation of a coupling circuit for a SATA storage device containing a
13 microcontroller must be considered especially when missing from all the references.

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15 In view of the above, it is respectfully submitted that amended claim 1 is nonobvious
16 and allowable.

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18 In paragraph no. 4 of the Office action, the Examiner rejects claim 2 stating that El-Batal
19 teaches out of band squelch control for activating the first Serial ATA controller-side
20 transceiver receiving a first Serial ATA communication path, the second Serial ATA
21 controller-side transceiver receiving a second Serial ATA communication path, and the
22 Serial ATA storage device-side transceiver.

23
24 El-Batal mentions a Serial ATA specification published in August 2001 (SATA
25 specification) in paragraph 5, but never incorporates by reference or cite to any pages
26 of the SATA specification. Further, the SATA specification fails to describe the problem
27 of noise that arises from out of band signaling in a coupling circuit and the solution of
28 out of band squelch control in a coupling circuit for a SATA storage device as recited in
29 claim 2.

1 El-Batal cannot teach what it does not mention. Specifically, El-Batal and the SATA
2 specification fail to disclose out of band squelch control for activating a first Serial ATA
3 controller-side transceiver receiving a first Serial ATA communication path and a
4 second Serial ATA controller-side transceiver. Only the present invention teaches
5 combining out of band squelch control component in a coupling circuit including a
6 microcontroller as recited in claim 2. For example, Figures 8 and 11 disclose an out of
7 band squelch control component 86 connected to the storage side and controller side
8 transceivers. It is respectfully submitted that claim 2 is patentable.

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10 In paragraph nos. 15-19 of the Office action, the Examiner rejects claims 3-7 as
11 unpatentable for obviousness over El-Batal and Okada as applied to claim 1 above, and
12 further in view of U.S. Patent No. 6,295,609 to Cargemel (Cargemel).

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14 Applicants submit that claims 3-7, all of which depend on amended claim 1, are
15 allowable for the same reasons presented in connection with claim 1 as well as the
16 additional limitations recited in each dependent claim.

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18 In paragraph no. 14 of the Office action, the Examiner rejects claim 22 as unpatentable
19 for obviousness over Okada, El-Batal, and Cargemel.


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21 Applicants respectfully submit that claim 22 is patentable for similar reasons presented
22 in connection with claim 1 as well as the additional limitations recited in claim 22.

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24 In paragraph no. 7 of the Office action, the Examiner rejects claim 23 based on Okada,
25 but notes that Okada does not disclose SATA storage devices. The Examiner states
26 that it would have been obvious to include El-Batal's teaching of SATA storage devices
27 to simplify switching circuitry of Okada or increase adaptability of the prevailing SATA
28 storage devices.

1 However, even if El-Batal and Okada are combined as suggested they do not teach a
2 plurality of coupling circuits each containing a microcontroller for a Serial ATA storage
3 device as recited in claim 23. It is therefore submitted that claim 23 is patentable.
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5 Please call if you have any question, comment, or it will expedite prosecution.
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7 Respectfully Submitted,
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